

The chromosome number and karyotype of *Plebeius (Plebejides) pylaon brethertoni* from Mt. Helmós, Pelopónnisos, Greece, its tentative elevation to species level, and notes about presently existing unsettled taxonomic questions in the *pylaon* species-group complex (Lepidoptera: Lycaenidae)

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Abstract. The CN and karyotype of *Plebeius (Plebejides) pylaon brethertoni* (Fischer von Waldheim, 1832) from Mt. Helmós, Pelopónnisos, Greece are being respectively shown and described, the taxon is given species status on a tentative basis, and the unsettled taxonomic situation within the *pylaon* species-group complex is being considered and discussed.

Samenvatting. Het chromosoomgetal en karyotype van *Plebeius (Plebejides) pylaon brethertoni* uit het Chelmosgebergte, Peloponnesos, Griekenland, de voorlopige verheffing tot soortniveau en notities over bestaande onopgeloste taxonomische problemen in de *pylaon*-soortengroep (Lepidoptera: Lycaenidae).

Résumé. Le nombre de chromosomes et le caryotype de *Plebeius (Plebejides) pylaon brethertoni* (Fischer von Waldheim, 1832) du Mt. Chelmos, Péloponnèse, Grèce; élévation provisoire au niveau d'espèce et notes sur les problèmes taxonomiques existant dans le groupe-espèce de *pylaon* (Lepidoptera: Lycaenidae).

Key words: Lycaenidae – *Plebeius* – *Plebeius (Plebejides) pylaon* species-group complex – *Plebeius (Plebejides) brethertoni* – karyotype – chromosome number – Greece – Pelopónnisos – Mt. Helmós.

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Introduction

A small series of *Plebeius (Plebejides) pylaon* (Fischer von Waldheim, 1832) were collected by the first author on Mt. Helmós, Pelopónnisos, Greece, and had their testes fixed by him. The second author, subsequently, carried out permanent chromosome fixations and eventual CN and karyotype determination.

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| Abbreviations: | CN | Chromosome number |
| | TL | Type locality |
| | vic | Vicinity |
| | MI | Metaphase of first division of primary spermatocyte |
| | MII | Metaphase of second division of primary spermatocyte |
| | <i>n</i> | Haploid chromosome number |
| | ssp. | Subspecies |

CN results and karyotype description

Four of the studied specimens gave perfectly legible results, and six in all spermatocytes in M I (one shown in Fig. 1) clearly showed their CN to be an unmistakable $n = 37$. The chromosomes were found to have a roughly

rectangular shape and to gradually decrease in size, the smallest one being about 30% smaller than the largest one.

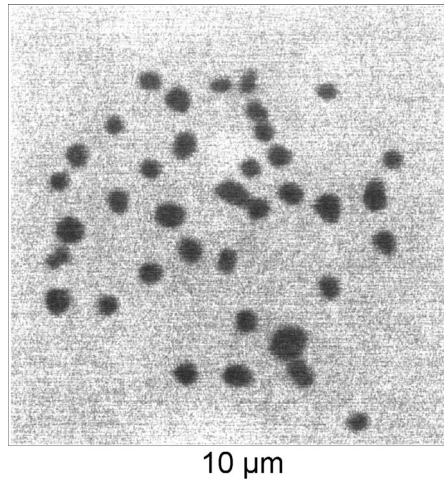


Fig. 1. Spermatocyte in M I of *Plebeius (Plebejides) pylaon* from Greece, Pelopónnisos, Mt. Helmós, 1650 m, 26.vi.1999. $n = 37$.

Other known CN counts within the *pylaon* species-group complex

Other chromosome counts within the *pylaon* species-group complex were carried out in the past by de Lesse (1960), who determined the CN for *P.(P.) pylaon sephirus* (Fivaldszky, 1835) from Amasya, Turkey as being $n = 19$, and for *P.(P.) pylaon turcmenicus* (Forster, 1936) from Demavend, Elburs, Iran, as well as for *P.(P.) pylaon nichollae* (Elwes, 1901) from Zahlé (very near Baalbek, its TL), Lebanon, in both cases as being $n = 21$; these represent to the best of our knowledge the only other existing chromosome counts relating to the *pylaon* species-group complex.

Discussion

Brown (1976a) had described *brethertoni* from Mt. Helmós as a ssp. of *pylaon*, and also applied this name to populations from central Greece as well as from Mt. Taíyotos, Pelopónnisos, on the basis of existing commonalities in the external characters of the wings (Brown 1976a, 1976b & 1977). This taxon was later sunk as a junior subjective synonym of *sephirus* (Tuzov *et al.* 2000 & Hesselbarth *et al.* 1995).

Conclusions

The disparity between the CN values of the Turkish/Iranian/Lebanese *pylaon* species-group taxa and the CN value of the taxon from Mt. Helmós ($n = 19/21/21$ vs. $n = 37$ respectively) is too great to support conspecificity between

the first three and the latter, and therefore the sinking of *brethertoni* as a junior subjective synonym of *sephirus* does not appear to be justified. It is probably best at present, and on a tentative basis, to consider *brethertoni* as being a separate species within the *pylaon* species-group complex, both because of CN differences from certain externally similar members of this species-group, as well as because of external differences from other members of the group whose CN is still unknown. It is therefore proposed that the name *Plebeius* (*Plebejides*) *brethertoni* (Brown, 1976) stat. nov. be applied to Mt. Helmós *pylaon* species-group specimens, leaving out, however, members of the group from central Greece and Mt. Taiyotos, whose CN is still unknown and which may eventually prove to be different from that of *brethertoni*.

Proposals

In order to remedy the unsettled taxonomic situation within the *pylaon* species-group complex, and considering that genital structures within this complex are not very reliable taxonomically, there being a lot of character overlap between the various taxa, it is proposed that the CN and karyotype for topotypical specimens of the following generally accepted taxa be finally determined (whether these taxa are being presently considered as being subspecies, semispecies, or species is immaterial):

- a. *P. (P.) pylaon*, TL Sarepta (vic. Volgograd), Russia.
- b. *P. (P.) sephirus*, TL Sliven, Bulgaria. (Turkish *sephirus* [$n = 19$], considered as such on the basis of external characters, may very well prove to have a different CN from that of topotypical material, requiring separation from it).
- c. *P. (P.) zephyrinus* (Christoph, 1884), TL Askhabad, Turkmenistan.
- d. *P. (P.) turcmenicus*, TL Transcaspia, Jablanowka & Arwas. (Iranian *turcmenicus* [$n = 21$], considered as such on the basis of external characters, may very well prove to have a different CN from that of topotypical material, requiring separation from it).
- e. *P. (P.) usbekus* (Forster, 1939), TL Samarkand, Uzbekistan.
- f. *P. (P.) trappi* (Verity, 1927), TL Brieg-Simplon, Wallis, Switzerland.
- g. *P. (P.) hespericus* (Rambur, 1839), TL Sierra de Alfacar, Andalusia, Spain.
- h. *P. (P.) philbyi* (Graves, 1925), TL Petra, Jordan.
- i. *P. (P.) cleopatra* (Hemming, 1934), TL Tel Khuweilfe (=Tel Halif), NE of Beersheba, near Kibutz Lahav, Israel.
- j. *P. (P.) indicus* (Evans, 1925), TL Khojak, Baluchistan, Pakistan.
- k. *P. (P.) patriarchus* (Bálint, 1992), TL Karanak valley, Zagara Mts., Darvaz, Tajikistan.
- l. *P. (P.) klausrosei* (Bálint, 1992), TL Vakhshsky Mts., Tajikistan.

If this is to be eventually carried out, then the foundations will have been laid for an eventual more thorough confrontation of the problem, which should involve CN counts for all known isolated populations of *pylaon* species-group taxa (many of which already bear subspecific names, often treated as synonyms), together with a study of their respective DNA sequences. Until this is achieved, the taxonomic situation within the *pylaon* species-group complex will necessarily have to be partly based on speculation and personal interpretation (Bálint & Kertész 1990).

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